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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,766	01/16/2004	Thomas M. Walsh	PD-980194A	8354

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THE DIRECTV GROUP INC
PATENT DOCKET ADMINISTRATION RE/R11/A109
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EXAMINER	
TRINH, TAN H	

ART UNIT	PAPER NUMBER
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/759,766	WALSH ET AL.	
	Examiner	Art Unit	
	TAN TRINH	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-15* is/are rejected.

7)☒ Claim(s) *11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-10, 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olds (U.S. Patent No. 5,732,351) in view of Hart (U.S. Pub. No. 2002/0132579), further in view of Chang (U.S. Patent No. 7200360).

Regarding to claim 1, Olds teaches a system of geostationary satellite orbits coordinatable with a geostationary belt of satellite positions having a plurality of geostationary slots (see fig. 1), the system comprising: a plurality of satellites forming coordinatable system of geostationary satellite orbits that provide satellite coverage continuously within a specified service area (see fig. 1, and col. 3, line 53-col. 4, line15); each satellite position being located in one of the plurality of geostationary slots and generating a plurality of beams in a respective group of cells (see fig. 2, col. 5, lines 28-53); and a tiling pattern for use on the surface of the earth (see fig. 2 col. 4, lines 1-15), the tiling pattern having a plurality of cells corresponding to the plurality of beams (see fig. 2, col. 4, lines 1-15 and col. 5, lines 28-53), each of the cells having a defined frequency for communication and a frequency reuse spacing (see figs. 1-2 and 8, col. 1 lines 37-42). But Olds does not mention at least one beam formed from a first of the plurality of satellites is directed to a group of cells formed from a second of the plurality of satellites.

However, Hart teaches at least one beam formed from a first (4a) of the plurality of satellites is directed to a group of cells formed from a second (4b) of the plurality of satellites (see fig. 2 and figs. 7-9, page 4, sections [0063-68] and page 5, sections [000073-0075]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Olds with Hart, in order to allocation of row of spot beams in the beam pattern of satellite to groups of regions at time T0 and later T1, At time T0 overlapping spot beams are directed at centres Ca to C1 of groups of regions 52 on the surface of the earth (see suggested by Hart on page 5, section [0073]).

Still regarding claim 1, Olds or Hart is not specifically show the newly added limitation of: "at least one beam has a different frequency than each corresponding cell from the group of cells formed the second of the plurality of satellites. Such teaching is taught by Chang, (see fig. 1, Geostationary Satellite 18, and fig. 4, center beam 40G, col. 3, lines 51-60). In this case, Chang teaches Geostationary Satellite 18 with plurality of beams 40A-40G, the center 40G is one frequency. Beams 40A-40F have a different frequency than beam 40G, therefore, the center beam 40G one has a different frequency than beams 40A-40F.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination of above teaching of Olds and Hart with Chang, in order to reduce the interference communication signal in same cell.

Regarding to claim 2, Olds teaches a first satellite occupying a first geostationary slot generating a first set of uniform beams, and a second satellite occupying a second geostationary slot generating a second set of uniform beams (see fig. 2, satellites 12 and set of beams 52).

Regarding to claim 3, Hart teaches allocation of row of spot beams in the beam pattern of satellite to groups of regions at time T0 and later T1, At time T0 overlapping spot beams are directed at centres Ca to C1 of groups of regions 52 on the surface of the earth (see page 5, section [0073]) and Hart teaches the cover area of the spot beams 51 of the satellite 4a and 4b, each spot beam 51 is individually and continually steered to remain fixed on a centre until it reaches the outermost rearward position of the beam pattern (see page 5, section [000076]). As to claim 3, references fail to disclose various values, such as beams have a width of 0.5 degree as cited in the claim. However, these skilled in the art would have appreciated that the above differences would not render the claims patentable over the applied references. The reasons are that the above differences would merely depend on how one would like to select particular values regarding the 0.5 degree to be suitable to the system requirements. Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the applied references as claimed, so that the system of the applied references would be suitable to different system requirements.

Regarding to claim 4, Hart teaches the cells have an area that is proportional to the latitude on the surface of the Earth (see page 6, sections [0098-0099])

Regarding to claims 5, Olds teaches the tiling pattern is continuous (see fig. 2).

Regarding to claim 6, Olds teaches wherein a tiling pattern first set of parameters for forming a tiling pattern includes a reuse pattern (see figs. 2 and 9, col. 2 lines 9-21).

Regarding to claim 7, Olds teaches the tiling pattern comprises a plurality of hexagons (see fig. 2 a plurality of hexagons).

Regarding to claim 8, Hart teaches a satellite system the first orbital slot and the second orbital slot are coextensive (see fig. 9, page 5, sections [0073-0074).

Regarding to claim 9, Olds teaches wherein the first satellite and the second satellite form a fixed satellite service (see col. 9, lines 39-55).

Regarding to claim 10, Olds teaches wherein the first satellite and the second satellite form a broadcast satellite service (see col. 4, lines.47-53).

Regarding to claim 12, Olds teaches wherein the tiling pattern forms regularly distributed cell rings (see fig. 2 with distributed cell ring).

Regarding to claim 13, Olds teaches wherein forming a tiling pattern comprises forming the tiling pattern from regularly distributed cell rings (see fig. 2 with distributed cell ring and col. 4, lines 10-15).

Regarding to claim 14, Olds teaches the method of operating a satellite system (see fig. 1-2) comprising the steps of: defining a tiling pattern for use on the surface of the earth having a number of cells (see fig. 2); generating a first set of beams from a first satellite, each of the beams directed to a first group of the cells (see fig. 2, col. 4, lines 1-15); generating a second set of beams from a second satellite, each of the beams in the second set of beams directed to a second group of the cells (see fig. 2, col. 4, lines 1-15), But Olds does not mention at least one of the beams from the second set of beams is directed to one in the first group of cells; and

coordinating coverage from the first set of beams and the second set of beams to avoid interference between the first set of beams and the second set of beams.

However, Hart teaches at least one of the beams (Ca-Cm) from the second set of beams is directed to one in the first group of cells (51 and 52); and coordinating coverage from the first set of beams and the second set of beams to avoid interference between the first set of beams and the second set of beams (see fig. 2 and figs. 7-9, page 4, sections [0063-70] and page 5, sections [000073-0075]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Olds with Hart, in order provide all of the mobile terminals within the same cell transmit and receive at the same pairs of frequencies F(f) and F(r) and signal from different mobile terminal are separated using TDMA, and contained within the relatively small, fixed area of the cell and are all at approximately the same distance from any one satellite, the variation in the uplink propagation delay between different mobile terminals and any satellite is limited and the interference between signals in adjacent time slots is greatly reduced (see suggested by Hart on page 5, section [0070]).

Still regarding claim 14, Olds or Hart is not specifically show the newly added limitation of: "assigning a frequency to the at least one of the beams from second set of beams that has a different frequency than each corresponding cell formed from the first set of beams. Such teaching is taught by Chang, (see fig. 1, Geostationary Satellite 18, and fig. 4, center beam 40G, col. 3, lines 51-60). In this case, Chang teaches Geostationary Satellite 18 with plurality of beams 40A-40G, the center 40G is one frequency. A set of beams 40A-40F have a different frequency than beam 40G, therefore, the center beam 40G one has a different frequency than

beams 40A-40F, and the center beam 40G can be the second set of beam has a different frequency than first set of beams 40A-40F.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination of above teaching of Olds and Hart with Chang, in order to reduce the interference communication signal in same cell.

Regarding claim 15, Olds teaches the satellite system (see figs. 1-2) comprising: a plurality of orbit slots having a first orbit slot and a second orbit slot (see figs. 1-2, col. 3, lines 53-col. 4, lines 15); a tiling pattern for use on the surface of the Earth (see fig. 2 col. 4, lines 1-15), the tiling pattern having a plurality of cells (see fig. 2, col. 4, lines 1-15), each of the cells having a defined frequency for communication (see col. 1, lines 28-42); a first satellite occupying a first orbit slot generating a first set of beams directed to a first group of the plurality of cells (see fig. 2, col. 4, lines 1-15); a second satellite occupying a second orbital slot generating a second set of beams directed to a second group of cells (see fig. 2, col. 4, lines 1-15). But Olds does not mention at least one of the beams from the second set of beams is directed to one in the first group of cells, and the first set of beams and the second set of beams being generated according to predetermined parameters to avoid interference between the first set and the second set of beams.

However, Hart teaches at least one of the beams from the second set of beams is directed to one in the first group of cells, and the first set of beams and the second set of beams being generated according to predetermined parameters to avoid interference between the first set and

the second set of beams (see fig. 2 and figs. 7-9, page 4, sections [0063-70] and page 5, sections [000073-0075]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Olds with Hart, in order provide all of the mobile terminals within the same cell transmit and receive at the same pairs of frequencies F(f) and F(r) and signal from different mobile terminal are separated using TDMA, and contained within the relatively small, fixed area of the cell and are all at approximately the same distance from any one satellite, the variation in the uplink propagation delay between different mobile terminals and any satellite is limited and the interference between signals in adjacent time slots is greatly reduced (see suggested by Hart on page 5, section [0070]).

Still regarding claim 15, Olds or Hart is not specifically show the newly added limitation of: "assigning a frequency to the at least one of the beams from second set of beams that has a different frequency than each corresponding cell formed from the first set of beams. Such teaching is taught by Chang, (see fig. 1, Geostationary Satellite 18, and fig. 4, center beam 40G, col. 3, lines 51-60). In this case, Chang teaches Geostationary Satellite 18 with plurality of beams 40A-40G, the center 40G is one frequency. A set of beams 40A-40F have a different frequency than beam 40G, therefore, the center beam 40G one has a different frequency than beams 40A-40F, and the center beam 40G can be the second set of beam has a different frequency than first set of beams 40A-40F.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination of above teaching of Olds and Hart with Chang, in order to reduce the interference communication signal in same cell.

Allowable Subject Matter

3. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 11 is allowed with the same reasons set forth in the previous Office action (paper mailed on 9-13-2006).

Response to Arguments

4. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that the reference of Hart is not teaches the Geostationary Satellite, However, the combination of Olds or Change is teaching the Geostationary Satellite (see Chang on fig. 1, Geostationary Satellite 18, and col. 2, lines 32-38 and col. 3, lines 42-43), Therefore, the combination of Olds, Hart and Change is teaching the limitation of the claim.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for Technology Center 2600 only)

*Hand-delivered responses should be brought to the Customer Service Window (now located at the **Randolph Building, 401 Dulany Street, Alexandria, VA 22314).***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Anderson, Matthew D., can be reached at (571) 272-4177.

The fax phone number for the organization where this application or proceeding is assigned is **(571) 273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is **(703) 306-0377**.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh
Division 2618
July 10, 2007

Anderson, Matthew D. (SPE 2618)